**CHAPTER ONE: INTRODUCTION**

**1.0. BACKGROUND INFORMATION**

An infant incubator is a closed chamber in which a controlled environment is provided to the premature or critically ill baby. The user can select the appropriate temperature, humidity and oxygen level suitable for the baby.an infant incubator is very sensitive equipment and temperatures have to be monitored closely in order to keep the infant safe. The default incubator temperature in NICU is 35degrees.A moisture detection mechanism is required to alert the user when the temperatures are exceeding or less than the set range so as to protect the infant having an unconducive environment of high/low temperature which can lead to dangers in severe cases.

When the temperatures exceeds maximum level, this will cause the activation of the buzzer and red LED to notify the user that the temperatures are unconducive and adjustments are required ,this is also displayed on the LCD.to achieve this ,LED’s,buzzers,LCD and proximity sensor will be interfaced with the microcontroller. The analogue quantities of speed will be taken from inside of baby incubator using a moisture sensor and converted into corresponding digital values. This converted digital value is sent to the microcontroller for temporary storage. The user will view the readings of the temperature level on the LCD at any time.

**1.1. PROBLEM STATEMENT**

As we know;

1. Existing systems require someone to manually check the temperature and humidity level after every half an hour. This besides taking a lot of manpower which are valuable resources than can be used elsewhere, it, increases the rate of hypoxic injuries and mortality rate among the babies. This system will solve the problem by providing a real time monitoring of moisture presence
2. The current system for moisture monitoring and control is not available in infant incubators currently available in the market.

**1.2. OBJECTIVES**

Main objective

infant incubator.

Specific objectives

To develop a cheap device that will continuously at all times monitor moisture presence in an To interface ultrasonic sensor with the microcontroller in order to detect the moisture presence in the incubator.

1. To compute the moisture signal then display the readings on the LCD.
2. To use microcontroller for switching and controlling the circuit as well as LED, alarm as output devices.

**1.3JUSTIFICATION**

The system is fully automated and requires no human control. The system monitors the presence of moisture and displays on the LCD at all times regardless whether high or low. If the moisture level is high the corresponding responses are indicated by means of LED and a buzzer sound. It is cost effective due to low consumption, easy to handle and efficient.